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| 10/697,096 | 10/31/2003 | Bruno Devos | DEVO3004/JEK | 9002 |

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| EXAMINER |
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NGUYEN, JIMMY H

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| ART UNIT | PAPER NUMBER |
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2629

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/697,096 | Applicant(s) DEVOS ET AL. | |
| | Examiner Jimmy H. Nguyen | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 10/23/2006.

Claims 1-21 are currently pending in the application. An action follows below:

Claim Objections

2. Claim 1 is objected to under 37 CFR 1.75(a) because although this claim meets the requirement 112/2d, i.e., the metes and bounds are determinable, however, the following changes should be made:

- a. "a digital signal" in line 6 should be changed to -- digitized control data and digitized video signals --, so as to make this limitation consistent with the limitation in line 7;
- b. "its position" in line 9 should be changed to -- the position of said control unit --, in order to clarify the claimed limitation; and
- c. "the received control data and video signals" in last line should be changed to -- the digitized control data and the digitized video signals --, so as to make these limitations consistent with the limitations in line 7;

It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary.

3. Claim 14 is objected to because of the following informalities: "Control unit for use in a configurable large-area display system according to claim 1, said control unit configured as a sub-display comprising" in lines 1-3 should be changed to -- Configurable large-area display system according to claim 1, wherein said control unit configured as a sub-display comprises --,

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in order to clarify the claimed invention. See any of claims 5 and 9. Appropriate correction is required.

4. Claim 15 is objected to because of the following informalities: "Control unit according to claim 14, including" in line 1 should be changed to -- Configurable large-area display system according to claim 14, wherein said control unit further comprises --, in order to clarify the claimed invention. See the objection to claim 14 above. Appropriate correction is required.

5. Claim 16 is objected to because of the following informalities: "Control unit according to claim 15" in line 1 should be changed to -- Configurable large-area display system according to claim 15", in order to clarify the claimed invention. See the objection to claim 14 above. Appropriate correction is required.

6. Claim 17 is objected to because of the following informalities: "Control unit according to claim 15" in line 1 should be changed to -- Configurable large-area display system according to claim 15 --, in order to clarify the claimed invention. See the objection to claim 14 above. Appropriate correction is required.

7. Claim 18 is objected to because of the following informalities: "Control unit according to claim 14" in line 1 should be changed to -- Configurable large-area display system according to claim 14", in order to clarify the claimed invention. See the objection to claim 14 above. Appropriate correction is required.

8. Claim 19 is objected to because of the following informalities: "Control unit according to claim 14" in line 1 should be changed to -- Configurable large-area display system according to claim 14", in order to clarify the claimed invention. See the objection to claim 14 above. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 21, this claim recites “depending on the desired spacing, some intermediate pixels, which are spaced apart less further **then** desired, are ignored for use”. First, it is not clear whether the word “**then**” is correct. Second, what spacing between intermediate pixels is considered as a desired spacing or a less desired spacing. Accordingly, it is considered that the invention is not clearly defined.

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 6, 16, 20, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claims above, these claims contain the feature, “the **EEPROM** contains production data factory light output measurements, as well as color coordinates for each pixel within modules”, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

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invention. The disclosure, when filed, specifically Fig. 2 and page 19, lines 6-17, expressly discloses **an EEPROM (224)** included in a control unit (116), for storing the hardware configuration and the spacing of the picture elements. Further, the disclosure, specifically page 13, lines 21-27, expressly discloses **another EEPROM included in each module 220**, for storing production data factory light output measurements, as well as color coordinates for each pixel (222) within modules (220). However, the specification and the drawing do not teach the above underlined feature, i.e., a single EEPROM containing production data factory light output measurements, as well as color coordinates for each pixel within modules, as presently claimed, in such a way as to enable one skilled in the art to understand where a single claimed EEPROM should be located, i.e., EEPROM should be disposed inside one of modules (220), any specific module (220), or outside of modules and how the EEPROM associates with other elements such as a controller 216, modules 220, and etc..

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 2, 11-14, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Maskeny (US 5,990,802).

As to claims 1, 11, 14 and 19, the claimed invention reads on the Maskeny reference as follows: Maskeny discloses a configurable large-area display system (a system 42, see Fig. 7, col. 2, line 37) comprising a display (a display including modules 12 as shown in Fig. 1)

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including a plurality of sub-displays or control units (12) (see Fig. 1), each containing an array of LED pixels (LEDs 16, Fig. 1, col. 4, line 14); a central controller hardware and software block (a computer (see Fig. 6) containing software to control the display system (42) and to generate control data and video signals to be displayed on the display (see col. 8, lines 32-47); and a digitizer (a microcontroller 20, see Figs. 1 and 6) converting said control data and video signals to a digital signal compatible with the display (see col. 5, lines 16-38); wherein the digitized control data and video signals are passed from one sub-display (12) to the next (see Fig. 4, col. 5, lines 64-66) and each sub-display or control unit (12) is capable of controlling the individual pixels (122) of said control unit (12) as a function of position within the display and of the received control data and video signals (see col. 2, line 56 to col. 3, line 5, and col. 6, line 59 through col. 7, line 23). Maskeny further teaches each sub-display or control unit (12) comprising 4 pixel clusters (Fig. 1 shows each pixel cluster comprising 4 groups of LEDs and associating with a latch driver IC 14) and each cluster including 4 pixel modules which are sequentially interconnected with each other and each containing an array of 4 LEDs (16). Accordingly, all the limitations of these claims are read in the Maskeny reference.

As to claim 2, Maskeny discloses the central controller hardware and software block (a computer) electrically connected digitizer (20) via a standard RS-232 connection (see Fig. 6, col. 6, lines 46-53, and col. 8, lines 48-50).

As to claim 12, Maskeny implicitly discloses that dimensions of the modules are relatively small, such that they can be assembled form displays having any 2D shape (see Figs. 1 and 7).

As to claim 13, Maskeny implicitly discloses that the modules of the display are arranged in a standalone manner so that the display apparently has transparent structure (see Fig. 1).

As to claim 18, Maskeny discloses the controller (216) provided with means for managing the pulse width modulation associated with driving pixels (16) of each module (see col. 11, lines 21-55).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny and further in view of Fiber Options (2210D RS 232 data single -mode fiber, cited in IDS filed on 05/13/2004).

As to claim 3, Maskeny further discloses the digitizer (20) connected to the display (12s) by connection means as shown in Fig. 4; however, Maskeny does not expressly teach the connection means being means of a fiber link, as presently claimed. However, Fiber Options expressly teaches that the benefit of using a single-mode fiber 2210D in the data transmission system is to make the system extremely versatile and easy to use. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the fiber in the Maskeny system, in view of the teaching in the Fiber Options, because this would provide a system extremely versatile and easy to use, as taught in the Fiber Options reference.

17. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny and further in view of Toshiba America Information Systems (Summary of RS-232, RS 422, and RS-485 Interface Standards, cited in IDS filed on 05/13/2004), hereinafter Toshiba.

As to claim 4, as discussed in the rejection to claim 1 above, Maskeny discloses all the claimed limitations of this claim except that Maskeny does not disclose expressly that, in the event that the distance between two successive control units (12) exceeds a predetermined distance, an intermediate resyncer is used between said two control units (12) to receive and retransmit the control data and video signals. However, Toshiba expressly teaches that in the event that the distance between multiple drivers and multiple receivers (i.e., two control units) exceeds a predetermined distance, a RS-485 interface (i.e., the claimed intermediate resyncer) is used between multiple drivers and multiple receivers to receive and retransmit the control data and video signals. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a RS-485 interface in the Maskeny system, in the event that the distance between two successive control units (12) exceeds a predetermined distance, in view of the teaching in the Toshiba reference, because this would provide a system with noise immunity, as taught in the Toshiba reference.. Further, see the Toshiba reference for more benefits of using a RS-485 interface.

18. Claim 5, 7-10, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny.

As to claims 5 and 15, Maskeny further discloses the control unit (12) including a voltage regulator (18) for generating +5V DC voltage to drive the circuits and LEDs (see Fig. 4, col. 4, lines 20-21 and lines 45-51), a resynchronizer unit (a unit including connections and nodes

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between two control units 12 as shown in Fig. 4) to receive and to transmit data, and a controller (a controller including 4 driver ICs 14, see Fig. 4) driving 4 pixel clusters that each includes 4 modules, each module containing an array of 4 LEDs 16 (see Figs. 1 and 4). Maskeny further teaches that the control unit (12) including means for storing different selected data for future use (see claim 17). Accordingly, Maskeny discloses all the claimed limitations of this claim except that Maskeny uses a voltage regulator and storing means, instead of an AC-to DC power supply and an EEPROM as presently claimed. However, Official Notice is taken that both the concept and the advantages of using an AC-to-DC power supply in a computerized system to avoid the use of charged power supply such as a battery, which limits the computerized system to be operated in a limited period, are well-known and expected in the art. Further, Official Notice is taken that both the concept and the advantages of using an EEPROM in a computerized system to remain the data even the system powered off are well-known and expected in the art. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace a voltage regulator and storing means of Maskeny with an AC-to-DC power supply and an EEPROM, because this would allow a use the system to be operated in a longer period and to avoid the lost of data when the system is turned off.

As to claims 7 and 17, the Maskeny controller (14s) inherently contains algorithms parse the control data and video signals received specific packets associated with the location given module within concerned control unit of display system, in order to drive properly each LED (16) in the display system.

As to claim 8, see the rejection to claim 18 above.

As to claim 9, as discussed in the rejection to claims 1, 11, 14 and 19 above, Maskeny further teaches each sub-display or control unit (12) comprising 4 pixel clusters and each cluster including 4 pixel modules which are sequentially interconnected with each other and each containing an array of 4 LEDs (16). Accordingly, Maskeny discloses all the claimed limitations except that Maskeny cluster contains four modules instead of 32 modules as presently claimed. While Maskeny may not exemplify particular number of modules as presently claimed; however, one of ordinary skill in the art would have been found it obvious to modify the cluster of Maskeny to contain 32 modules in accordance with a particular application. Furthermore, since Applicants have not disclosed the particular number of modules to solve any other problem, to provide other advantage, or to be used for any other purpose, the difference between the number of modules in the Maskeny reference and that of claim 9 is a mere change in the number of modules. Therefore, one of ordinary skill in the art would have found it obvious to modify the number of modules in the Maskeny cluster as desired as was judicially recognized in re Rose, 105 USPQ 237 (CCPA 1955).

As to claim 10, as discussed in the rejection to claims 1, 11, 14 and 19 above, Maskeny also teaches each module comprising an array of 2x2 pixels (16) (see Fig. 1).

Response to Arguments

19. Applicant's arguments filed 10/23/2006 have been fully considered but they are not fully persuasive.

With respect to the specification objection, drawing objection, claim objection, the rejection under 35 USC 112, second paragraph, to claims 13 and 20, and the double patenting

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rejection in the Office Action dated 06/22/2006, these have been withdrawn in light of the amendment filed 10/23/2006.

With respect to the rejection under 35 USC 112, first paragraph, to claims 6, 16, 20 and 21, in the Office Action dated 06/22/2006, Applicants' argument, see page 10 of the amendment, is not persuasive because (1) **Not in all cases**, a person skilled in the art would understand that a memory such as an EEPROM could readily be implemented by a single component or multiples components, e.g., is a single EEPROM could be readily replaced for a memory of a computer, a memory of a display controller, a memory of a display pixel, and etc., and (2) there is no where in the specification to disclose a single EEPROM for containing production data factory light output measurements, as well as color coordinates for each pixel within modules, as presently claimed, in such a way as to enable one skilled in the art to understand where a single claimed EEPROM should be located and can associate with other elements such as a controller 216, modules 220, and etc., as plural EEPROMs can do.

With respect to the rejection under 35 USC 112, second paragraph, to claim 21, in the Office Action dated 06/22/2006, Applicants' argument, see pages 10-11 of the amendment, is not persuasive because (1) Applicants' argument is based on "...**than**..." while the claim recite "...**then**..." and (2) see the detailed rejection above.

With respect to the rejection under 35 USC 102(b) as being anticipated by Maskeny, in the Office Action dated 06/22/2006, Applicants argue "Turning to ... Maskeny fails to disclose or suggest such a display wherein an entire image is sent to all sub-displays and each sub-display **extracts and displays** a relevant portion of the image based on its position", see paragraph beginning with "Turning..." on page 12 of the amendment. Examiner disagrees because (1)

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independent claim 1 does not presently recite “each sub-display **extracts and displays** a relevant portion of the image...”, as argued by Applicants; (2) Maskeny expressly teaches the entire data is sent to all sub-displays (see col. 3, lines 21-27); and (3) as recognized by Applicants that the Maskeny panel displays information according to receipt of a data packet specifically addressed according to the panel’s serial number (see page 12, last 5 lines, of the amendment; however, Maskeny further teaches the panel’s serial number or logical ID according to a **logical position** of the panel within the display system (see col. 6, line 59 through col. 7, line 47).

Applicant’s arguments, see pages 13-14 of the amendment, filed 10/23/2006, with respect to the rejection under 35 USC 102(b) as being anticipated by Holloman in the Office Action dated 06/22/2006, have been fully considered and are persuasive. This rejection has been withdrawn.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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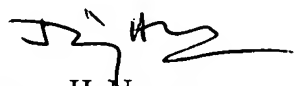
21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675.

The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
November 29, 2006


Jimmy H. Nguyen
Primary Examiner
Technology Division: 2629